






METHODS FOR CONSISTENT FOREWARNING OF CRITICAL EVENTS ACROSS MULTIPLE DATA CHANNELS

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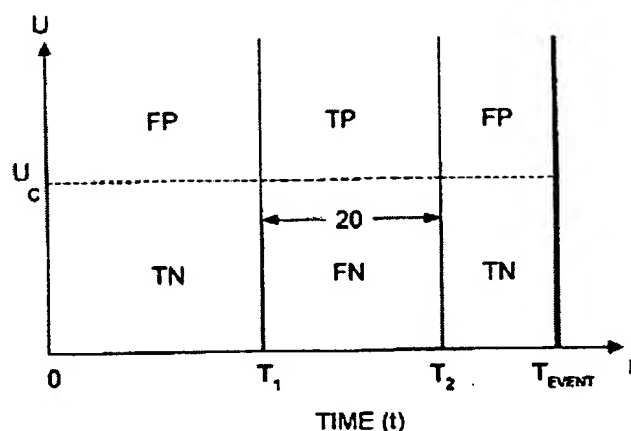
 WO2004008373 (A3)
 WO2004008373 (A2)
 US2004087835 (A1)
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Abstract of CA2491987

This invention teaches further method improvements to forewarn of critical events via phase-space dissimilarity analysis of data from biomedical equipment, mechanical devices, and other physical processes. One improvement involves conversion of time-series data into equiprobable symbols. A second improvement is a method to maximize the channel-consistent total-true rate of forewarning from a plurality of data channels over multiple data sets from the same patient or process. This total-true rate requires resolution of the forewarning indications into true positives (TP), true negatives (TN), false positives (FP) and false negatives (FN) relative to a forewarning window 2σ . A third improvement is the use of various objective functions, as derived from the phase-space dissimilarity measures, to give the best forewarning indication. A fourth improvement uses various search strategies over the phase-space analysis parameters to maximize said objective functions. A fifth improvement shows the usefulness of the method for various biomedical and machine applications.



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